Amari ireland Ltd

SPECIFICATIONS

Commercial	6063A
EN	6063A

Aluminium Alloy 6063A
Aluminium alloy 6063A is a variation of 6063 with greater strength but retains the same good surface finish qualities and affinity for anodising.

Applications
6063A is used in the same applications as 6063. It is also used in:
Road transport
Rail transport
Extreme sports equipment

Aluminium Alloy 6063
Aluminium alloy 6063 is a medium strength alloy commonly referred to as an architectural alloy. It is normally used in intricate extrusions.
It has a good surface finish, high corrosion resistance, is readily suited to welding and can be easily anodised. Most commonly available as T6 temper, in the T4 condition it has good formability.

Applications
6063 is typically used in:
Architectural applications
Extrusions
Window frames
Doors
Shop fittings
Irrigation tubing
In balustrading the rails and posts are normally in the T6 temper and formed elbows and bends are T4. T4 temper 6063 aluminium is also finding applications in hydroformed tube for chassis.

CHEMICAL COMPOSITION

BS EN 573-3:2009
Alloy 6063

Element	% Present
Magnesium (Mg)	0.60 - 0.90
Silicon (Si)	0.30 - 0.60
Iron (Fe)	0.15 - 0.35
Chromium (Cr)	0.0 - 0.15
Others (Total)	0.0 - 0.15
Zinc (Zn)	0.0 - 0.15
Manganese (Mn)	0.0 - 0.15
Other (Each)	0.0 - 0.05
Copper (Cu)	0.0 - 0.05
Titanium (Ti)	0.0 - 0.05
Aluminium (Al)	Balance

ALLOY DESIGNATIONS

Aluminium alloy 6063/6063A also corresponds to the following standard designations and specifications ***but may not be a direct equivalent***:
AA6063
Al Mg0.7Si
GS10
AlMgSi0.5
A-GS
3.32206
ASTM B210
ASTM B221
ASTM B241 (Pipe- Seamless)
ASTM B345 (Pipe- Seamless)
ASTM B361
ASTM B429
ASTM B483
ASTM B491
MIL G-18014
MIL G-18015
MIL P-25995
MIL W-85
QQ A-200/9
SAE J454
UNS A96063
HE19

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TEMPER TYPES

The most common temper for 6063 aluminium are:

- O - Soft
- T4 - Solution heat treated and naturally aged to a substantially stable condition

SUPPLIED FORMS

Alloy 6063 is supplied as standard extrusions including tee, channel, angle and flat bar as well as box section and tube

- Extrusions
- Tube

GENERIC PHYSICAL PROPERTIES

Property	Value
Density	2.70 g/cm³
Melting Point	600 °C
Thermal Expansion	23.5 x10^{-6} /K
Modulus of Elasticity	69.5 GPa
Thermal Conductivity	200 W/m.K
Electrical Resistivity	0.035 x10^{-6} Ω .m

MECHANICAL PROPERTIES

BS EN 755-2:2008
Rod and Bar
Up to 150mm Dia. & A/F

Property	Value
Proof Stress	90 Min MPa
Tensile Strength	150 Min MPa
Elongation A50 mm	10 Min %
Hardness Brinell	50 HB
Elongation A	12 Min %

Properties above are for material in the T4 condition

BS EN 755-2:2008
Bar
150mm to 200mm dia. & A/F

Property	Value
Proof Stress	90 Min MPa
Tensile Strength	140 Min MPa
Hardness Brinell	50 HB
Elongation A	10 Min %

Properties above are for material in the T4 condition

BS EN 755-2:2008
Tube
Up to 10mm Wall Thickness

Property	Value
Proof Stress	90 Min MPa
Tensile Strength	150 Min MPa
Elongation A50 mm	10 Min %
Hardness Brinell	50 HB
Elongation A	12 Min %

Properties above are for material in the T4 condition

BS EN 755-2:2008
Tube
10mm to 25mm Wall Thickness

Property	Value
Proof Stress	90 Min MPa
Tensile Strength	140 Min MPa
Elongation A50 mm	8 Min %
Hardness Brinell	50 HB
Elongation A	10 Min %

Properties above are for material in the T4 condition

BS EN 755-2:2008
Profiles
Up To 25mm Wall Thickness

Property	Value
Proof Stress	90 Min MPa
Tensile Strength	150 Min MPa
Elongation A50 mm	10 Min %
Hardness Brinell	50 HB
Elongation A	12 Min %

Properties above are for material in the T4 condition

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WELDABILITY

6063 is suitable for all conventional welding methods.
Welding wire generally should be alloy 5183 or alloy 4043.
When maximum electrical conductivity is required use alloy 4043.
For strength and conductivity use alloy 5346 and increase the size of the weld to compensate for the lower conductivity.

Weldability – Gas: Excellent
Weldability – Arc: Excellent
Weldability – Resistance: Excellent
Brazability: Excellent
Solderability: Good

FABRICATION

Workability - Cold: Average
Machinability: Average

CONTACT

Address:	Please make contact directly with your local service centre, which can be found via the Locations page of our web site.
Web:	www.amari-ireland.com

REVISION HISTORY

Datasheet Updated	11 January 2016

DISCLAIMER

This Data is indicative only and as such is not to be relied upon in place of the full specification. In particular, mechanical property requirements vary widely with temper, product and product dimensions. All information is based on our present knowledge and is given in good faith. No liability will be accepted by the Company in respect of any action taken by any third party in reliance thereon.

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